

Name:

Student Number:

Date:

Lesson 6 Orientation

Activity Sheet

Context

How do you position yourself during a field trip? With the help of modern technologies such as GPS Apps, it becomes easier to locate and identify where you are. However, what if you were in a hostile environment where the Internet might not be accessible? Stars, for example, could fulfill as a navigation tool. You will explore how to model the stars by using the Motions and Looks blocks in mBlock.

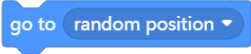
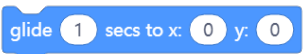
Task 6-1 Human GPS

Scenario: ***"Help!"** I need to get from Point A to Point B but my phone died and I don't know where to go. Could you please help me?"*

Task 6-2 Explore Motion Blocks

Explore blocks in the Category of Motion in mBlock. Pay specific attention to the blocks shown as follows:

(You can either use the default sprite – i.e. the panda – or add a sprite you like. The following section is related to space, you are welcome to select characters and objects relevant to this context.)

Block	Function
	Move the sprite forward the specified number of steps in the direction it faces
	Turn the sprite the specified amount of degrees clockwise or counter-clockwise
	Define the sprite's X and Y coordinates to a random position or the position of the mouse pointer. Yet, the move is without displayed animation
	Define the sprite's X and Y coordinates to the specified number
	Similar to the function of the "go to ... (random position/mouse-pointer)" block, move its sprite at a steady pace to a random position or the position of the mouse pointer, while the move is without displayed animation
	Move the sprite steadily to the specified X and Y coordinates within the specified amount of seconds. The moving effect makes the motion more precise and vivid than that of the "go to X/Y" block
	Point the sprite in the specified direction by rotating the sprite the specified amount of degrees
	Point the sprite toward the position of the mouse-pointer

Block	Function
	Move the sprite costume center's X or Y coordinate by the specified value
	Define the sprite costume center's X or Y coordinate to a specified number
	If the sprite is touching the edge of the stage, the sprite will then point in a direction that mirrors the direction from which it was coming
	Define the rotation style of the sprite. There are three options: left-right , don't rotate , and all around . "Left-right" means the sprite can only face left or right, and any other directions are rounded. "Don't rotate" means that the sprite always faces as in 90 degrees. "All around" means the sprite can face any of the 360 degrees

Task 6-3 Navigate with Stars

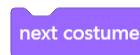
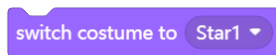
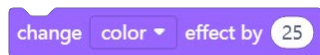
Animate the stars in the space by using Motion blocks, for example:

- Make the star rise from above the horizon;
- Make a group of stars rotate in the sky;
- Make the stars fall and disappear near the horizon; etc.

Add a backdrop too! Make your project look more vivid!

Challenge: Add more animation effects such as changing color by using Looks blocks. Recall and think of how many ways you could animate the color-changing effect.

Tips: you may need to use these coding blocks:



You can also tailor the costume of the star sprite directly in the sprite's "Costume" panel.

Key Concepts from this Learning Activity

Terms	What it means
Looks Blocks*	This set of blocks is used to design a sprite's appearance.
Motion Blocks*	This set of blocks is used to control and display a sprite's movement.
Sequencing	A set of ordered steps for accomplishing a task.

* New term